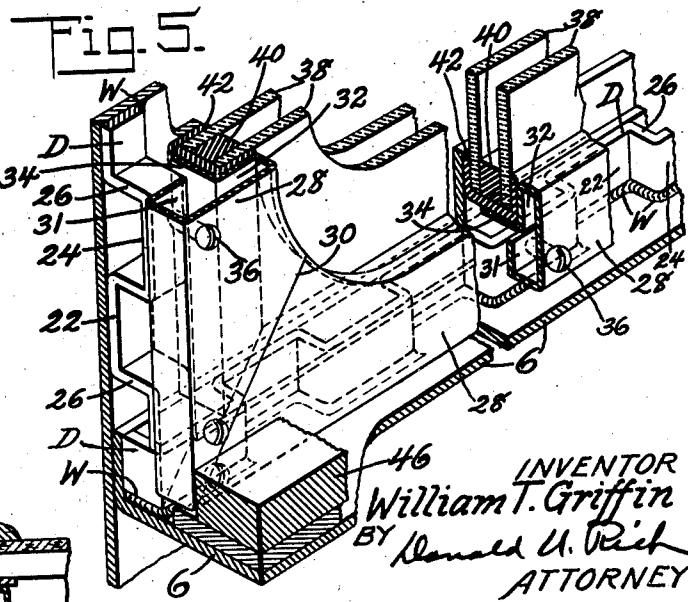
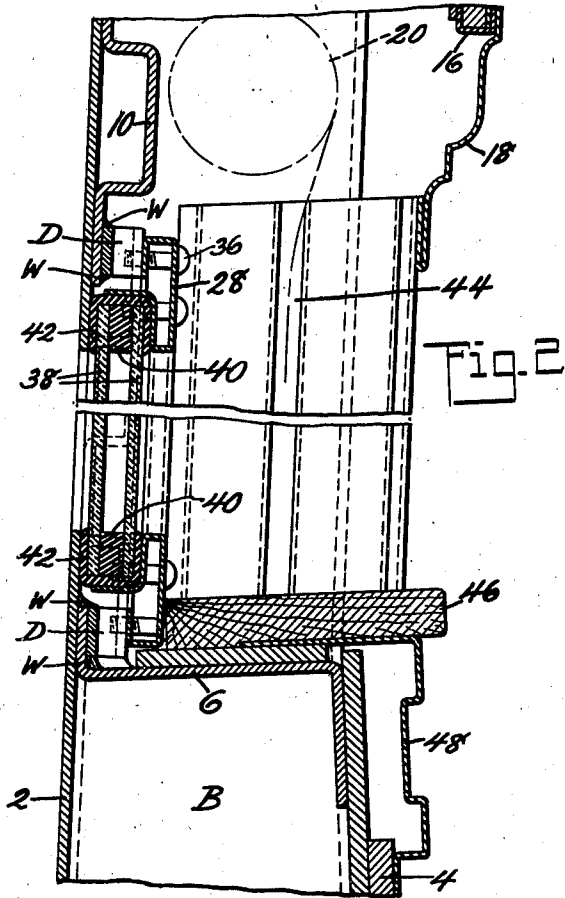
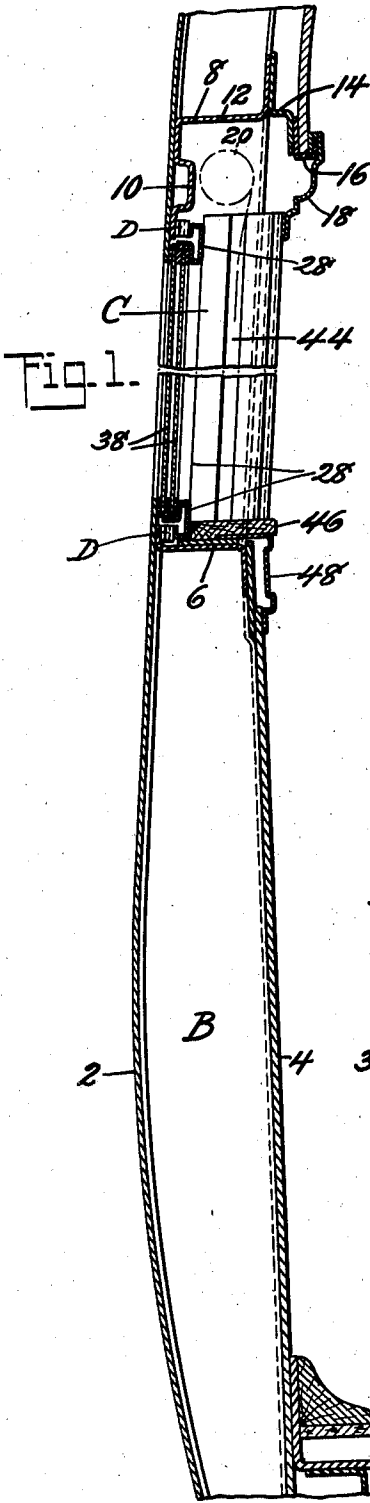


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W. T. GRIFFIN  
WINDOW CONSTRUCTION  
Filed Dec. 6, 1934

2,029,772

2 Sheets-Sheet 1



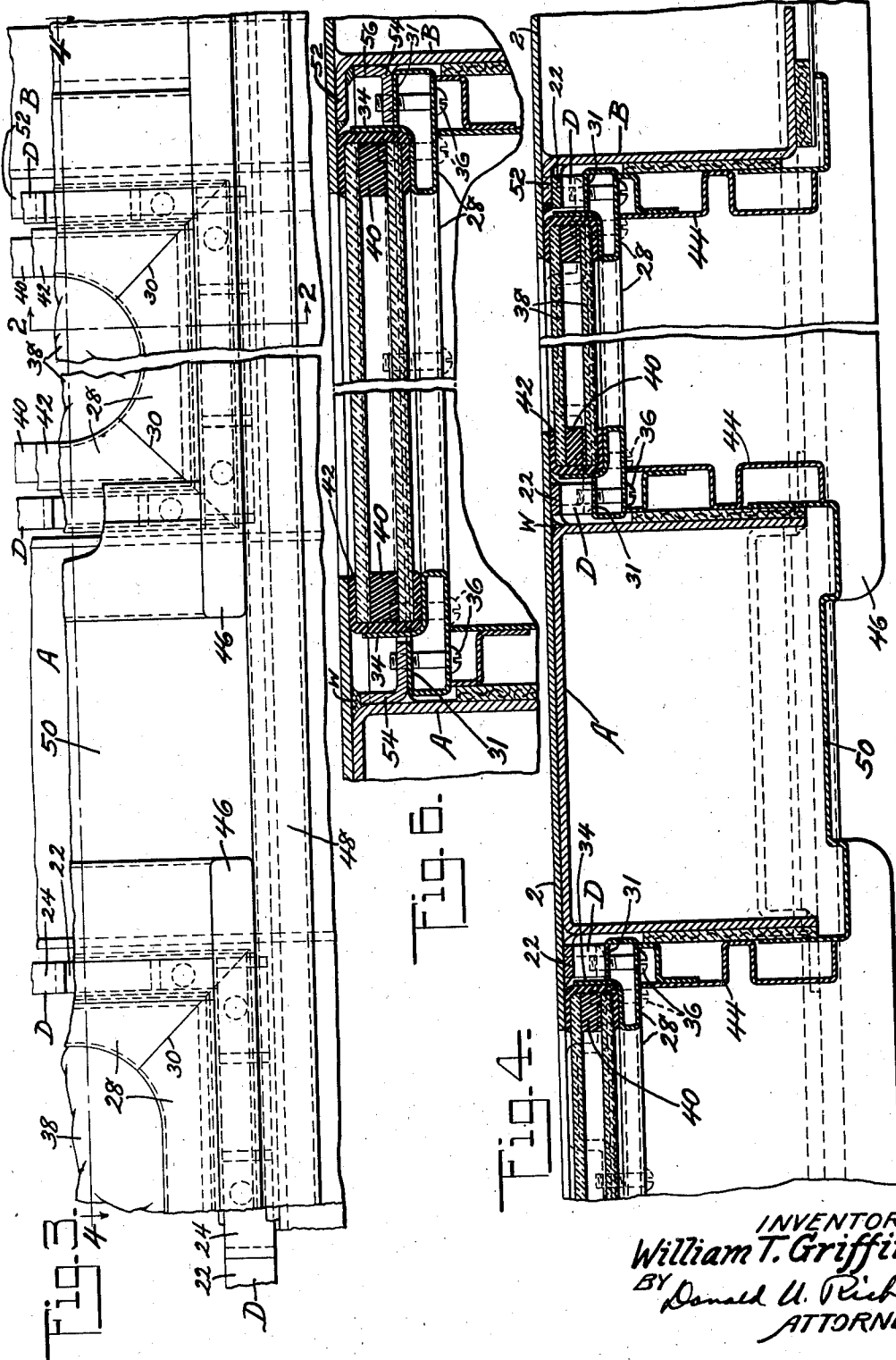
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2,029,772

2 Sheets-Sheet 2



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# UNITED STATES PATENT OFFICE

2,029,772

## WINDOW CONSTRUCTION

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York, N. Y., a corporation of New Jersey

Application December 6, 1934, Serial No. 756,205

8 Claims. (Cl. 189-64)

The invention relates to railway cars in general, and in particular to passenger cars especially of the streamline type and window structures therefor.

It is an object of this invention to provide an improved arrangement whereby window frames may be more conveniently and cheaply mounted in the sides of a structure.

Another object of this invention is the provision of a cheap easily manufactured means whereby the window frame may be clamped in sealing relation to the sides of the structure.

Another object of this invention is the simplification of the attaching and sealing means for window frames and of the cooperating car structure.

A still further object of this invention is the provision of a strong yet light window structure adapted especially for streamlined or air conditioned cars.

These and further objects will be apparent to one skilled in the art when taken in connection with the accompanying drawings in which

Figure 1 is a sectional view of a car side showing the window in relation to the side wall;

Fig. 2 is a close up section of the window shown in Fig. 1 and taken on line 2-2 of Fig. 3;

Fig. 3 is a partial elevational view looking toward a pair of windows from the inside of the car;

Fig. 4 is a horizontal section through a car side and taken on line 4-4 Fig. 3 and showing two forms of side posts;

Fig. 5 is a perspective view with parts broken away showing the construction at a lower corner of the window, and

Fig. 6 is a sectional view similar to Fig. 4 but showing a modification.

Referring now to the drawings in which the invention is shown as applied to a railway car having side posts A and B which may be of the usual form or extend in an arch from side to side of the car to also form the carlines. The side posts and carlines are covered with suitable outer plates 2 and inner plates 4 of any suitable shape or material desired. Window openings C are formed by bottom plates 6 of Z form extending between and welded to the side posts, and top plates 8 of angular formation also extending between and welded to the side posts. The top plate 8 is of composite form being provided with an outwardly directed channel portion 10 and a Z form portion 12 to the upstanding leg of which is attached a Z member 14 carrying an interior trim-supporting channel 16. A decorative mold-

ing strip 18 is interlocked with the trim-supporting channel, the whole forming a curtain housing for curtain 20 shown diagrammatically in Figs. 1 and 2.

The outer side plates are extended beyond the edges of the window opening and are welded inward of their edges to the posts, top plate 8 and bottom plates 6 thus forming an extremely strong, frame rigidifying portion. Crimped metal straps D extend completely around the window opening and are provided with outer plane portions 22 and inner plane portions 24 connected by portions 26 which in the instance shown are at right angles to the portions 22 and 24 although this is not necessary since any angle desired may be used. The side straps D have their outer portion 22 welded at W directly to the side plate extension adjacent the side posts while the top and bottom straps D have their outer portion 22 welded to the legs of the top plate 8 and bottom plate 6 respectively. It is readily seen that simply by bending the straps D so as to make the connecting portions 26 of proper length the inner portions 24 will be placed in a single plane for the attachment of the window clamping member 28 or some other member if desired. The window clamping member is shown as formed in four parts which may be joined at the corners by welding along lines 30 if desired or the entire member may be pressed from a single piece of metal.

The window supporting and clamping member 28 is formed with two opposed channel shaped portions 31 and 32 from the latter of which is extended a window positioning flange 34. Machine screws 36 extend through channel portions 31 and upon being tightened down will exert a pressure causing channel portion 32 to move outwardly thus clamping the window unit against the car side wall.

The window unit as shown comprises two panes of glass 38, preferably of the non-shatter type, spaced apart by a spacer 40 and carried in a channel 42 of rubber or other suitable material. The entire unit is self-contained and is preferably formed so that the space between the panes is sealed against ingress of moisture or any foreign matter, and upon being clamped by member 28 against the car wall it effectively seals the car against ingress of moisture or foreign matter and also serves as an effective heat insulation due to the sealed double pane construction. This construction is purely representative since a single pane with its rubber channel comprising a unit may be used if desired. Curtain guides 44, win-

dow ledge 46 and trim 48 are applied to complete the window.

The side posts may be of the forms shown in Fig. 4 in which post A is formed of a channel with its back welded to the plates with the open side closed by trim plates 50 while post B is formed of a channel opening outwardly and provided with flanges 52 welded to the side plate and upon which will be mounted the strap D. These posts are simply illustrative of the preferred forms, although other forms may be used, and show the extreme ease and cheapness with which the uni-planar portion 24 for the clamping member may be formed by simply crimping an ordinary piece of strap metal the proper amount.

In the modification shown in Fig. 6 the securing member 54 is formed of angle metal and its proper adjustment is secured by either controlling the depth of the outwardly directed flange 56 or by the depth of welding metal used for its attachment.

Although the construction has been shown and described as applied to a rail car of the streamline construction it is obvious that it is equally applicable to other structures such as ships, metal buildings and containers and is to be limited only in accordance with the appended claims.

What is claimed is:

1. In a window construction, the combination of top, bottom, and side members forming a window opening, means projecting beyond said members into said opening to thereby form a shoulder surrounding the opening, a window unit in said opening, means attached to said shoulder and adapted to receive clamping and positioning means for said unit.

2. In a window construction, a window opening, metal members forming a shoulder surrounding the opening, a window unit in said opening adjacent the shoulder, means attached to said shoulder, clamping members having laterally extending unit positioning flanges, and means cooperating with said first mentioned means and said clamping members to force the unit into engagement with said shoulder.

3. In a window construction, a window opening, metal members forming a shoulder surrounding the opening, a window unit in said opening adjacent the shoulder, means comprising metal strips crimped to provide portions for attachment to said shoulder and parallel portions spaced laterally from said shoulder, clamping members, and means cooperating with said spaced portions and said clamping members to force the unit into engagement with the shoulder.

4. In a window construction, a window opening, metal members forming a shoulder surrounding the opening, a window unit in said opening adjacent the shoulder, means comprising metal strips crimped to provide portions for attachment to said shoulder and portions spaced from said shoulder, clamping members having laterally directed unit positioning flanges, and means cooperating with said spaced portions and said clamping members to force the unit into engagement with the shoulder.

5. In a window construction, a window opening, metal members forming a shoulder surrounding the opening, a window unit in said opening adjacent the shoulder, means comprising angle shaped metal members having one flange attached to said shoulder and the other flange offset from and substantially parallel thereto, clamping members, and means cooperating with said offset flange and said clamping members to force the unit into engagement with the shoulder.

6. In a window construction, a window opening, metal members forming a shoulder surrounding the opening, a window unit in said opening adjacent the shoulder, means comprising angle shaped metal members having one flange attached to said shoulder and the other flange offset from and substantially parallel thereto, clamping members having laterally directed unit positioning flanges, and means cooperating with said offset flange and said clamping members to force the unit into engagement with the shoulder.

7. In a window construction, a substantially flat metallic plate, a window opening therein, a window unit adapted to be positioned adjacent said opening, means attached to said plate and spaced from the edges of said window opening, clamping means having laterally directed unit positioning flanges, and means cooperating with said first mentioned means and said clamping member to hold the unit in fixed engagement with the plate.

8. In a window construction, a substantially flat metallic plate, a window opening therein, a window unit adapted to be positioned adjacent said opening, means comprising metal strips crimped to provide portions for attachment to said plate and portions spaced from said plate, clamping members having laterally directed unit positioning flanges, and means cooperating with said spaced portions of the crimped metal strips and said clamping members to hold the unit in fixed engagement with the plate.

WILLIAM T. GRIFFIN.